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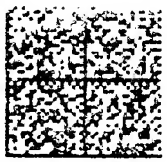

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/802,104	03/16/2004	Robert J. Crist	02-10	3215

30699 7590 09/30/2009

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MIAMISBURG, OH 45342

EXAMINER	
LUONG, VINH	
ART UNIT	**PAPER NUMBER**
3656	
MAIL DATE	**DELIVERY MODE**
09/30/2009	PAPER

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ROBERT J. CRIST

Appeal 2009-003423
Application 10/802,104
Technology Center 3600

Decided: September 29, 2009

Before LINDA E. HORNER, MICHAEL W. O'NEILL, and FRED A. SILVERBERG, *Administrative Patent Judges*.

O'NEILL, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Robert J. Crist (Appellant) seeks our review under 35 U.S.C. § 134 of the final rejection of claims 1-9, 11, and 24. Claims 10 and 12-23 are canceled. We have jurisdiction under 35 U.S.C. § 6(b) (2002). We REVERSE.

The Invention

The claimed invention is to a vibration damper for damping vibrations in a rotating shaft.

Claim 1, reproduced below, is representative of the subject matter on appeal.

> 1. A vibration damper for damping torsional and bending vibrations in a rotating shaft having an axis of rotation, the vibration damper comprising:
>
> a hub adapted to be coupled to the shaft for rotational movement therewith;
>
> an inertia element concentric with the hub; and
>
> an elastic element adapted to non-rigidly couple the hub and the inertia element;
>
> wherein the elastic element possesses a first shear modulus in a first direction and a second shear modulus in a second direction and wherein the first shear modulus and the second shear modulus are different.

The Rejection

The Examiner rejected claims 1-9, 11, and 24 under 35 U.S.C. § 103(a) as unpatentable over Haga (US Patent 6,345,430 B1, issued Feb. 12, 2002) in view of Harris et al. Shock and Vibration Handbook, (5th ed. 2002), Engineering Properties of Composites, pp. 35.1-35.31, written by Keith T. Kedward, ("Harris").

OPINION

The Appellant contends that the Examiner's rejection is based upon impermissible hindsight guided by the Appellant's own invention (App. Br.

5). As such, the issue before us is whether the Examiner's rejection is based upon impermissible hindsight, i.e., since vibration dampers for rotating shafts are known and because anisotropic elastic materials are known, it would have been obvious to use anisotropic elastic materials with shear moduli in different directions in a vibration damper.

Haga does not mention the use of composites for the vibration damper. Instead, Haga discloses, teaches, and suggests the use of a rubber-like elastic material with a non-slide agent, such as polymethylene-polyphenyl-polyisocyanate between the elastic material and the metallic parts of the vibration damper (Haga, *passim*). Haga does not disclose the elastic material, the non-slide agent, or the combination of the two as an anisotropic material with shear moduli in different directions, as called for in claims 1 and 11.

Harris, a handbook regarding the shock and vibration characteristics of composites, lists fibers as having different elastic modulus in the axial and traverse directions, but does not describe that the fibers have different shear moduli in different directions.

For a composite material to have different shear moduli in different directions, the layers of the fibers and matrix that form the composite material have to be oriented in such a manner to bestow upon the composite material the difference in shear moduli. Therefore, the Examiner erroneously concluded that because the fibers listed in Harris have different elastic modulus in the axial and traverse directions, and the shear modulus of a material can be derived from the elastic modulus of the material, then Harris teaches a composite material having different shear moduli in different directions.

Neither Haga nor Harris teaches orienting fiber and matrix layers to make an elastic element on a vibration damper to have different shear moduli in different directions. As such, the substitution proposed by the Examiner is not an obvious combination of prior art elements or a simple substitution of one known element for another, leading to predictable results, or any other indicator of obviousness. Rather the extensive amount of modification needed to make the combination proposed by the Examiner is suggested nowhere in the cited art, and is born from the use of impermissible hindsight reconstruction in view of Appellant's Specification.

Accordingly, the Appellant has demonstrated that the Examiner's rejection is based upon impermissible hindsight guided by the Appellant's own invention.

DECISION

The Examiner's decision to reject claims 1-9, 11, and 24 under 35 U.S.C. § 103(a) as unpatentable over Haga in view of Harris is reversed.

REVERSED

Klh

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